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ABSTRACT

Two issues relevant to the effectiveness of media used in second language literacy instruction were addressed in this study: learner-selected versus teacher-assigned media, and media that appeal to learners' preferred perceptual modes compared with media that do not match preferred modes. A group of 47 preliterate Hmong refugees between the ages of 24 and 65 who were acquiring English as a second language was selected for study. Subjects' preferred perceptual modes were classified as auditory, visual, or kinesthetic on the basis of the Kerby Learning Modality Test; the corresponding media options were a videotape, photographs, or a live teacher. Results showed a significant difference in achievement outcomes between learners who selected their media and those who were assigned to media. Since many subjects did not demonstrate a dominant learning modality, the match between media and preferred perceptual modes was clear for only 13 subjects. There was no significant difference in literacy achievement outcomes between this group and learners who used media that did not clearly match their preferred perceptual modes. The impact of the culture of the participants on the study is discussed, and 17 references are listed. (Author/MES)

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How does the match between media and learners' preferred
perceptual modes affect literacy learning?

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ABSTRACT

This study addressed two issues relevant to the effectiveness of media used in second language literacy instruction: learner-selected media versus teacher-assigned media, and media which appeals to learners' preferred perceptual modes compared with media which does not appear to match learners' preferred modes. Subjects were preliterate Hmong refugees acquiring English as a Second Language. Media of instruction were designed to appeal to one of three perceptual modes identified by the Kerby Learning Modality Test (1980): auditory, visual, or kinesthetic. Results showed a significant difference in achievement outcomes between learners who selected their media versus those who were assigned to media. Since many subjects did not demonstrate a dominant learning modality on the Kerby Learning Modality Test, the match between media and preferred perceptual modes was clear for only 13 subjects. There was no significant difference in literacy achievement outcomes between this group and learners who used media which did not clearly match their preferred perceptual modes.

Introduction

Preliterate Hmong adults have been instructed in English as a Second Language classes in the United States for more than ten years. (Since the Hmong language was not produced in written form until the mid-1950's, many Hmong adults have not experienced the process of becoming literate in their native language. Hence the term "preliterate" rather than "illiterate".) Recent studies conducted among this population (Reder, 1982; Weinstein, 1984; Hvitfeldt, 1985, 1986) indicate that these learners respond favorably to second language instruction that uses contexts and media which are familiar to them. Theoretical criteria for selecting instructional media to be used for promoting second language literacy acquisition among preliterate learners have not, however, been established.

Within the context of second language literacy acquisition, this study addressed the issues of the effectiveness of media which learners prefer (Clark, 1980) and the effectiveness of media which match the symbol systems in which learners are competent (Gross, 1974; Olson, 1974; Gardner & Perkins, 1974; and Salomon, 1979; 1981). The literacy achievement outcomes of second language learners who chose their own media of instruction was compared with the outcomes for learners who were assigned media. Further, the study investigated the relationship between learners' preferred perceptual modes--auditory, visual, or kinesthetic-- and the effectiveness of media used in instruction.

Procedures

Forty-seven Hmong refugees between the ages of 24 and 65 years of age were selected for this study. Of this group, 33 (25 females and 8 males) completed the activities of the study.

Subjects who volunteered to participate in the study were given the literacy section of the Washington State Adult Refugee Project ESL Oral Placement Test (Hargett & Callaway, 1986) to determine their literacy level in English. Those chosen for the study were able to recognize some written and printed alphabet letters in upper and lower case as well as single and double digit numbers. They could not, however, recognize more than two sight words from a list of survival words taught in ESL classes for refugees.

Following the English literacy proficiency test, subjects were given the Kerby Learning Modality Test (M.L. Kerby, 1980) to determine their preferred perceptual modes. Care was taken to explain each section in Hmong and to demonstrate what was expected of subjects. They responded better than anticipated to the test, although a few did not attempt some sections. Subjects were then assigned to one of two experimental groups or a control group. Those in the experimental groups were interviewed in Hmong about

their experiences in studying languages, their exposure to the kinds of media that were to be used in the study and their preferences for media of instruction.

Three choices of media were presented to the subjects for the learning trials: 1) a video tape of hand -printed flashcards with both the English pronunciation and the Hmong translation of the phrases on the audio track; 2) a set of 5x7 glossy photographs which illustrated the phrases presented simultaneously on the flashcards; 3) a live teacher with real objects to demonstrate the meaning of information on the flashcards. The media were designed to appeal to learners' modality preferences (auditory, visual, or kinesthetic) for the way in which they discovered the meanings of the written forms presented.

The subjects in the two experimental groups were taught 15 new vocabulary words and the numerals 1-12 in three 30 minute learning sessions over a three day period. Subjects in one group were taught through the media they had chosen (live teacher demonstration or video tape with Hmong translation) and those in another group were instructed through media to which they were assigned (photographs, live teacher demonstration, or video tape with translation). In all learning sessions, subjects repeated aloud the words they were learning. Subjects in the control group were exposed to the vocabulary and numerals on flashcards for ten minutes on the first day, and then returned to their regular classes.

After three instructional sessions, subjects from the two experimental groups were individually interviewed in Hmong about their satisfaction with the media they had been using. They were also asked whether they would continue with the same media or whether they would make different choices. All subjects (including those in the control group) were then individually tested in English on the vocabulary they had been taught. The tests were given orally and consisted of four tasks written on flashcards exactly like those used in the learning sessions. Subjects were to read the task statements aloud, translate them into Hmong, and perform the task indicated (e.g. "Pick up the red pen.").

Results

There was great variability among the English literacy proficiency of subjects involved in the study. Literacy proficiency scores ranged from 1-22 out of a possible 40 points. The Kerby Learning Modality Test indicated clear modality preferences for 13 of the 27 subjects in the experimental groups: 8 auditory, 4 kinesthetic and 1 visual. The performance of 12 subjects on this test indicated no clear modality preferences. Two subjects did not complete all portions of the test.

After seeing the three possible media choices for the learning trials, 18 of the 27 subjects in the experimental groups chose a live teacher demonstration using real objects and 6 chose the video tape with the Hmong translation on the audio track. Two subjects chose the video or the live teacher demonstration and one showed no preference. None of the subjects chose the photographs presented simultaneously with flashcards. Preferred learning modalities identified by the Kerby Learning Modality Test matched with media choices made by only 11 of the 27 subjects in the two experimental groups.

The achievement outcomes for the subjects in the two experimental groups were analyzed using Analysis of Covariance. The covariate was the literacy proficiency score of each subject at the beginning of the study. The independent variable was learner selection (versus assignment) of media in the first data analysis and match to perceptual mode in the second analysis. The dependent variable was the literacy achievement score. The results for the control group were not included in the data analysis, since the group was reduced to six subjects by the end of the study.

TABLE 1

BY CHOICE WITH LIT					
ACHV					
SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
COVARIATES	9978.502	1	9978.502	20.191	0.000
LIT	9978.502	1	9978.502	20.191	0.000
MAIN EFFECTS	426.822	1	426.822	0.864	0.362
CHOICE	426.822	1	426.822	0.864	0.362
EXPLAINED	10405.324	2	5202.662	10.528	0.001
RESIDUAL	11860.676	24	494.195		
TOTAL	22266.000	26	856.385		

27 CASES WERE PROCESSED.
0 CASES (0.0 PCT) WERE MISSING.

Initial analysis of this data sample indicates that the opportunity to choose the medium of instruction did not significantly affect literacy achievement outcomes once the groups were adjusted for those in the media assignment group who drew the media they would have selected. A comparison of the achievement

outcomes between the 11 subjects who used media (whether selected or assigned) that matched their preferred perceptual modes and the 16 who used media which did not match their preferred modes indicates that the match between media and preferred perceptual modes did not affect literacy achievement. Additional data analysis is planned. This analysis will include the covariates of subjects' ages, their experience using the media employed in this study, and their satisfaction with the usefulness of particular media in promoting their acquisition of second language literacy.

TABLE 2

ACHV BY MODE WITH LIT					
SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
COVARIATES	10203.594	1	10203.594	23.060	0.000
LIT	10203.594	1	10203.594	23.060	0.000
MAIN EFFECTS	1075.361	1	1075.361	2.430	0.132
MODE	1075.361	1	1075.361	2.430	0.132
EXPLAINED	11278.955	2	5639.478	12.745	0.000
RESIDUAL	10619.712	24	442.488		
TOTAL	21898.667	26	842.256		

27 CASES WERE PROCESSED.
0 CASES (0.0 PCT) WERE MISSING.

Discussion

Throughout the achievement testing process, it was apparent that auditory memory played a very important role in many subjects' attempts to "read" what was printed on the flashcards. Once they recognized a word on the card, they often recited a phrase using that word which had been on the learning trial cards rather than the phrase on the card they were encountering in the test situation. It did not seem important to some that they "read" more words than were on the card before them.

Regardless of the effect of media used on the achievement of the subjects, it was clear to the researcher and the translators that the choice of media of instruction was important to the Hmong from the standpoint of their comfort with the learning situation. They are a traditional people from an oral culture and they prefer instructional methods which include oral information and personal

interaction. They do not find two dimensional visual materials--even photographs--particularly helpful in a formal learning situation.

The culture of the participants in this study had a significant impact on the procedures and the outcomes. The first impact was on the size of the sample. Of the 47 subjects who volunteered to participate, only 35 appeared to take the achievement tests on the fourth day. (Two of these were subsequently eliminated from the study because they did not fall within the guidelines for learners to be included in the study.) Severe weather had some impact on that day's attendance. It is noteworthy, however, that nine of the twelve who did not attend were in the control group. During the three days of learning trials, some members of the control group had tried to join the learning trials with the experimental groups. Translators kept re-explaining why they were not to participate in these activities, but their actions did not indicate that they completely understood the experimental situation. While the Hawthorne effect may partially account for the behavior of those in the control group, it appeared that Hmong culture was also at work in this situation.

All individual interviews with subjects, explanations of activities and specific test directions were translated into the Hmong language. This was not always easy because of differences in the linguistic structures of English and Hmong and because there are no words in Hmong for some of the activities described in the tests. Hmong has no word for "corner", for example.

The collaborative learning style characteristic of Hmong culture proved a constant challenge in testing and in individual interviews. When the Kerby test was given, the translator had to explain the necessity of students working independently. Moreover, the timing of each portion of the test had to be adjusted to the subjects' practice of discussing each new activity on the test before they attempted it. Timing of the sections of the test began after conversation stopped.

Individual interviews for literacy evaluation and for information from the learners directly conflicted with the collaborative style of the Hmong. If the interviews were conducted one-to-one in separate rooms, the interviewees became nervous. They seemed to prefer having the interviews in the room where many other activities were going on at the same time. In the latter case, the examiners constantly dealt with friends looking over the shoulders of examinees and distractions from children and other onlookers. None of the onlookers, however, tried to help examinees with answers. Nor did they seem to be using their observations to gain an advantage for their own test performance.

The use of video tape to gather information about subjects' interaction with media was not possible in the field conditions under which the study was conducted. Subjects were distributed among four different sites. All classrooms were used several times a day by different groups, so media equipment could not be set up ahead of time or left in place. Time in the classroom was limited and the principal researcher had little opportunity to withdraw enough from the instrumentation to video tape the process. Whenever the video camera was turned on, subjects stopped what they were doing and came over to look at the equipment. It was finally determined that still camera shots and audio tape recordings were less intrusive in this situation.

Cultural differences in understanding and manifesting attentiveness during the learning sessions undoubtedly affected the effectiveness of instruction by any form of media for individual subjects. Throughout the learning sessions, babies were being passed from one woman to another (two were being nursed during class); children were entering and leaving the room (3 year old twins chose to stand next to their mother and fight with each other while she tried to take an achievement test); husbands interrupted to give messages to their wives or to take them home early; and men in the learning groups simply got up and wandered over to see what others were doing. It was generally possible to keep groups of two or three subjects focused on the literacy information during the learning trials. In groups of four or more people, however, individuals were constantly distracted by another person in the group or another activity in the room.

Despite the difficulties of conducting research on media in such field conditions, it is the kind of research that will yield valid findings for an instructional situation. Laboratory studies of people from traditional cultures like the Hmong will generate skewed behavior among the participants. Moreover, laboratory conditions are so different from the situations in which formal instruction is given to this population that any finding would be of questionable value.

With the help of good translators and accurate information about the culture of the subjects, additional studies of preliterate Hmong should yield useful insights into how people from a decidedly non-technological background respond to media in educational settings. These insights should contribute to our understanding of how media is perceived by people with little or not exposure to western technology or to formal educational situations. There perception of media will have a lot to do with the effectiveness of an educational effort which must help them make the transition from an eighteenth century rural, migratory experience to a twenty-first century communication-age culture within a few months.

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